Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A high throughput assay for detecting GST alleles present in a patient comprising the steps of:

obtaining a biological sample from the patient;

isolating genomic DNA from the sample;

performing PCR amplification of a portion of the DNA to detect GSTM1 alleles;

performing PCR amplification of a portion of the DNA to detect GSTM3 and GSTT1 alleles;

performing PCR amplification of a portion of the DNA to detect GSTP1 polymorphisms; and

detecting GSTM1, GSTM3, GSTT1, and GSTP1 polymorphic alleles in the DNA obtained from the PCR amplification steps.

Claims 2-7 (**canceled**)

Claim 8 (original): The method of claim 1, wherein the step of performing PCR amplification of a portion of the DNA to detect GSTM1 alleles comprises performing fluorescent, allele-specific PCR using GSTM1-specific primer sequences.

Claim 9 (**currently amended**): The method of claim 8, wherein individual GSTM1-specific primer sequences ~~separately include~~ are selected from ~~the sequences of~~ SEQ ID NO: 1, SEQ ID NO: 2, SEQ ID NO: 3, SEQ ID NO: 4, and SEQ ID NO: 5.

Claim 10 (**canceled**)

Claim 11 (original): The method of claim 8, wherein the portion of the DNA is also PCR-amplified to detect ß-actin as a reaction control using ß-actin-specific PCR primer sequences.

Claim 12 (**currently amended**): The method of claim 11, wherein the individual ß-actin-specific primer sequences ~~separately include~~ are selected from SEQ ID NO: 6, SEQ ID NO: 7, and SEQ ID NO: 8.

Claim 13 (**canceled**)

Claim 14 (original): The method of claim 1, wherein the step of performing PCR amplification of a portion of the DNA to detect GSTM3 and GSTT1 alleles comprises performing PCR using GSTM3- and GSTT1-specific primer sequences.

Claim 15 (**currently amended**): The method of claim 14, wherein the individual GSTM3- and GSTT1-specific primer sequences ~~separately include~~ are selected from SEQ ID NO: 9, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 24, SEQ ID NO: 25, and SEQ ID NO: 26.

Claim 16 (**canceled**)

Claim 17 (original): The method of claim 1, wherein the step of performing PCR amplification of a portion of the DNA to detect GSTP1 polymorphisms comprises performing fluorescent, allele-specific PCR using GSTP1-specific primer sequences.

Claim 18 (**currently amended**): The method of claim 17, wherein the individual GSTP1-specific primer sequences ~~separately include~~ are selected from SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, SEQ ID NO: 19, SEQ ID NO: 20, SEQ IN NO: 21, SEQ ID NO: 22 and SEQ ID NO: 23.

Claim 19 (**canceled**)

Claim 20 (original): The method of claim 1, wherein the step of detecting GSTM1, GSTM3, GSTT1, and GSTP1 polymorphic alleles in the DNA obtained from the PCR amplification steps includes combining the DNA obtained from the PCR amplification steps to detect GSTM1, GSTM3, GSTT1, and GSTP1 alleles.

Claim 21 (original): The method of claim 20, wherein the step of detecting GSTM1, GSTM3, GSTT1 and GSTP1 polymorphic alleles in the DNA obtained from the PCR amplification steps further includes conducting a gel electrophoresis of the combined DNA.

Claim 22 (**canceled**)

Claim 23 (original): The method of claim 20, wherein the step of detecting GSTM1, GSTM3, GSTT1 and GSTP1 polymorphic alleles in the DNA obtained from the PCR amplification steps further includes conducting a capillary electrophoresis of the combined DNA.

Claim 24 (**canceled**)

Claim 25 (**currently amended**): The method of claim [[24]] 20, wherein the step of detecting GSTM1, GSTM3, GSTT1, and GSTP1 polymorphic alleles in the DNA obtained from the PCR amplification steps is followed by performing a long range PCR assay of a portion of the DNA to distinguish GSTM1*A/A or GSTM1*B/B homozygotes from GSTM1*A/null and GSTM1*B/null heterozygotes.

Claim 26 (original): The method of claim 25, wherein the step of performing a long range PCR assay of a portion of the DNA is conducted using GSTM1*0-specific primer sequences.

Claim 27 (original): The method of claim 26, wherein the GSTM1*0-specific primer sequences are SEQ ID NO: 27 and SEQ ID NO: 28.

Claim 28 (**currently amended**): The method of claim [[24]] 20, wherein the step of detecting GSTM1, GSTM3, GSTT1 and GSTP1 polymorphic alleles in the DNA obtained from the PCR amplification steps is followed by performing a long range PCR assay of a portion of the DNA to determine the gene dosage of GSTT1.

Claim 29 (original): The method of claim 28, wherein the step of performing a long range PCR assay of a portion of the DNA to determine the gene dosage of GSTT1 is conducted using GSTT1*0-specific primer sequences.

Claim 30 (original): The method of claim 29, wherein the GSTT1*0-specific primer sequences are SEQ ID NO: 33 and SEQ ID NO: 34.

Claim 31 (original): The method of claim 28, wherein the step of performing a long range PCR assay of a portion of the DNA to determine the gene dosage of GSTT1 is conducted using GSTT1*0-specific primer sequences and GSTT1/GSTT2-non-specific primer sequences.

Claim 32 (original): The method of claim 31, wherein the GSTT*0-specific primer sequences are SEQ ID NO: 33 and SEQ ID NO: 34 and the GSTT1/GSTT2-non-specific primer sequences are SEQ ID NO: 31 and SEQ ID NO: 32.

Claim 33 (original): The method of claim 1, wherein the steps of performing PCR amplification of a portion of the DNA are followed by the steps of identifying portions of the DNA which failed PCR amplification and performing single nucleotide extension verification assays on the portions of the DNA which failed PCR amplification.

Claim 34 (original): The method of claim 1, wherein the step of performing PCR amplification of a portion of the DNA to detect GSTM1 alleles includes using primers having the sequences of SEQ ID NO: 1, SEQ ID NO: 3 and SEQ ID NO: 4; the step of performing PCR amplification of a portion of the DNA to detect GSTM3 and GSTT1 alleles includes using primers having the sequences of SEQ ID NO: 9, SEQ ID NO: 11, SEQ ID NO: 24 and SEQ ID NO: 25; and performing PCR amplification of a portion of the DNA to detect GSTP1 polymorphisms includes using primers having the sequences of SEQ ID NO: 13, SEQ ID NO: 15, SEQ ID NO: 17, SEQ ID NO: 19, SEQ ID NO: 21 and SEQ ID NO: 23.

Claim 35 (original): The method of claim 34 wherein the steps of performing PCR amplification of a portion of the DNA are followed by the steps of identifying portions of the DNA which failed PCR amplification and performing single nucleotide extension verification assays on the portions of the DNA which failed PCR amplification.

Claim 36 (original): A method of assessing the potential toxicity of chemotherapy in a patient comprising the steps of:

obtaining a biological sample from the patient;

isolating genomic DNA from the sample;

performing PCR amplification of a portion of the DNA to detect GSTM1 alleles;

performing PCR amplification of a portion of the DNA to detect GSTM3 and GSTT1 alleles;

performing PCR amplification of a portion of the DNA to detect GSTP1 polymorphisms;

detecting GSTM1, GSTM3, GSTT1, and GSTP1 polymorphic alleles in the DNA obtained from the PCR amplification steps; and

comparing the GSTM1, GSTM3, GSTT1 and GSTP1 polymorphic alleles present to predetermined standards to evaluate the potential toxicity of chemotherapy to the patient.

Claim 37-70 (**canceled**).